AUTHORIZATION TO DISCHARGE UNDER THE

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended (M.G.L. Chap. 21, §§26-53),

Chang Farms, Inc.
415 River Road
South Deerfield, MA 01373

is authorized to discharge from a facility located at

Chang Farms, Inc.
301 River Road
Whately, MA 01093

to a receiving waters named

Connecticut River (Connecticut Watershed)
Sugarloaf Brook (Connecticut Watershed)

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on the first day of the calendar month following 60 days after signature.

This permit and the authorization to discharge shall expire at midnight five (5) years from the last day of the month preceding the effective date.

This permit consists of 11 pages in Part I, including effluent limitations, monitoring requirements, an outline of a BMP plan, 9 pages in Attachment A, and 27 pages in Part II, including General Conditions and Definitions.

Signed this 29th day of September, 2006

/s/ SIGNATURE ON FILE

Linda Murphy, Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

Glenn Haas, Director
Division of Watershed Management
Bureau of Resource Protection
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number **001**, treated effluent to the Connecticut River. Such discharges shall be limited and monitored as specified below.

Effluent Characteristic	**Effluent Limits**		**Monitoring Requirements**[1]	
Parameter	**Monthly Average**	**Daily Maximum**	**Measurement Frequency**	**Type**[9]
Flow[3]	0.15 MGD	Report	continuous	Recorder
pH	6.5 - 8.3 SU (see page 8 of 11, Part I.A.4.)		continuous	Recorder
BOD_5	26.6 mg/l 33.3 lbs/day	41.5 mg/l 62.3 lbs/day	2/month	24-hour composite[4]
TSS	15.5 mg/l 19.4 lbs/day	23.2 mg/l 34.8 lbs/day	2/month	24-hour composite[4]
Bacteria[2] April 1st through October 31st Fecal coliform *E. coli*	 200 cfu/100 ml Report cfu/100 ml	 400 cfu/100 ml Report cfu/100 ml	 1/week 1/month	 Grab Grab
Total residual chlorine[5]	1.0 mg/l	1.0 mg/l	1/week[5]	Grab
Total Kjeldahl Nitrogen	Report mg/l	Report mg/l	1/quarter	24-hour composite[4]
Nitrite + Nitrate Nitrogen	Report mg/l	Report mg/l	1/quarter	24-hour composite[4]
Total Phosphorus	Report mg/l	Report mg/l	1/quarter	24-hour composite[4]
Whole Effluent Toxicity[6,7,8] LC_{50}	Acute, $LC_{50} \geq 50\%$		2/year	24-hour composite[4]

See page 3 for explanation of footnotes.

Footnotes:

1. All sampling shall be representative of the effluent that is discharged through outfall 001 to the Connecticut River. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of every month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report that is submitted to EPA. In addition, all samples shall be analyzed using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. All required effluent grab samples shall be collected immediately after the UV disinfection system. All continuously monitored parameter and composite samples shall be taken from the flow monitoring flume upstream of the UV disinfection system. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.
2. Required for State Certification. **Bacteria monitoring will be conducted during the period April 1st through October 31st only**, to reflect the seasonal disinfection requirements.
3. For flow, report maximum and minimum daily rates and total flow for each operating date.
4. A 24-hour composite will consist of twenty-four (24) hour flow proportional composite samples taken using an automatic sampler on a weekday.
5. **Total residual chlorine monitoring will be conducted year round.** After submitting four consecutive test results, all of which demonstrate compliance with the TRC permit limit, the permittee may request a reduction in the frequency of required TRC testing to no less frequent than once per month. The permittee is required to continue testing, at the frequency specified in the permit, until notice is received by certified mail from the EPA that the TRC testing requirement has been changed. The sampling program required in Footnote 1 shall include coordination of TRC sampling events with facility cleaning/washing events.
6. The permittee shall conduct acute toxicity testing twice (2) per year. The permittee shall test the daphnid, *Ceriodaphnia dubia*, only. Toxicity test samples shall be collected during the second week of June and September. The test results shall be submitted by July 31st and October 31st to be consistent with other facilities in the Connecticut River watershed. The tests must be performed in accordance with test procedures and protocols specified in Attachment A**,** *Toxicity Test Procedure and Protocol,* of this permit. After submitting two consecutive sets of whole effluent toxicity (WET) test results, all of which demonstrate compliance with the WET permit limits, the permittee may request a reduction in the frequency of required WET testing to no less than one time per year. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from the EPA that the WET testing requirement has been changed.
7. The LC_{50} is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 50% limit means that a sample of 50% effluent shall cause no more than a 50% mortality rate.

8. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall follow procedures outlined in Attachment A, Section IV, DILUTION WATER in order to obtain permission to use alternate dilution water. In lieu of individual approvals for alternate dilution water required in Attachment A, EPA-New England has developed a Self-Implementing Alternative Dilution Water Guidance document (called "Guidance Document") which may be used to obtain automatic approval of alternate dilution water, including the appropriate species for use with that water. If this Guidance document is revoked, the permittee shall revert to obtaining approval as outlined in Attachment A. The "Guidance Document" has been sent to all permittees with their annual set of DMRs and Revised Updated Instructions for Completing EPA's Pre-Printed NPDES Discharge Monitoring Report (DMR) Form 3320-1 and is not intended as a direct attachment to this permit. Any modification or revocation to this "Guidance Document" will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in Attachment A.
9. Samples analyzed by continuous recording instruments or collected as a 24-hour composite shall be from the discharge flume. Grab samples shall be from the sampling port downstream of the UV disinfection system.

2. During the period beginning the effective date and lasting until commencement of discharge from outfall 001, the permittee is authorized to discharge from outfall serial number **002**, treated effluent to Sugarloaf Brook. Such discharges shall be limited and monitored as specified below.

Effluent Characteristic	**Effluent Limits**		**Monitoring Requirements**[1]	
Parameter	**Monthly Average**	**Daily Maximum**	**Measurement Frequency**	**Type**
Flow[3]	0.15 MGD	Report	continuous	Recorder
pH	6.5 - 8.3 SU (see page 8 of 11, Part I.A.4.)		continuous	Recorder
BOD_5	26.6 mg/l 33.3 lbs/day	41.5 mg/l 62.3 lbs/day	2/month	24-hour composite[4]
TSS	15.5 mg/l 19.4 lbs/day	23.2 mg/l 34.8 lbs/day	2/month	24-hour composite[4]
Bacteria[2] April 1st through October 31st Fecal coliform *E. coli*	200 cfu/100 ml Report cfu/100 ml	400 cfu/100 ml Report cfu/100 ml	1/week 1/week	Grab Grab
Total residual chlorine[5]	1.0 mg/l	1.0 mg/l	1/week[5]	Grab
Total Kjeldahl Nitrogen	Report mg/l	Report mg/l	1/quarter	24-hour composite[4]
Nitrite + Nitrate Nitrogen	Report mg/l	Report mg/l	1/quarter	24-hour composite[4]
Total Phosphorus	Report mg/l	Report mg/l	1/quarter	24-hour composite[4]
Whole Effluent Toxicity[6,7,8] LC_{50}	Acute, $LC_{50} \geq 50\%$		2/year	24-hour composite[4]

See page 6 for explanation of footnotes.

Footnotes:

1. All sampling shall be representative of the effluent that is discharged through outfall 002 to Sugarloaf Brook. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of every month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report that is submitted to EPA. In addition, all samples shall be analyzed using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136.
2. Required for State Certification. **Bacteria monitoring will be conducted during the period April 1st through October 31st only**, to reflect the seasonal disinfection requirements
3. For flow, report maximum and minimum daily rates and total flow for each operating date.
4. A 24-hour composite will consist of twenty-four (24) hour flow proportional composite samples taken using an automatic sampler on a weekday.
5. **Total residual chlorine monitoring will be conducted year round.** After submitting four consecutive test results, all of which demonstrate compliance with the TRC permit limit, the permittee may request a reduction in the frequency of required TRC testing to no less frequent than once per month. The permittee is required to continue testing, at the frequency specified in the permit, until notice is received by certified mail from the EPA that the TRC testing requirement has been changed. The sampling program required in Footnote 1 shall include coordination of TRC sampling events with facility cleaning/washing events.
6. The permittee shall conduct acute toxicity testing twice (2) per year. The permittee shall test the daphnid, *Ceriodaphnia dubia*, only. Toxicity test samples shall be collected during the second week of June and September. The test results shall be submitted by July 31st and October 31st to be consistent with other facilities in the Connecticut River watershed. The tests must be performed in accordance with test procedures and protocols specified in Attachment A***,*** ***Toxicity Test Procedure and Protocol,*** of this permit. After submitting two consecutive sets of whole effluent toxicity (WET) test results, all of which demonstrate compliance with the WET permit limits, the permittee may request a reduction in the frequency of required WET testing to no less than one time per year. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from the EPA that the WET testing requirement has been changed.
7. The LC_{50} is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 50% limit means that a sample of 50% effluent shall cause no more than a 50% mortality rate.
8. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall follow procedures outlined in Attachment A, Section IV, DILUTION WATER in order to obtain permission to use alternate dilution water. In lieu

of individual approvals for alternate dilution water required in Attachment A, EPA-New England has developed a Self-Implementing Alternative Dilution Water Guidance document (called "Guidance Document") which may be used to obtain automatic approval of alternate dilution water, including the appropriate species for use with that water. If this Guidance document is revoked, the permittee shall revert to obtaining approval as outlined in Attachment A. The "Guidance Document" has been sent to all permittees with their annual set of DMRs and Revised Updated Instructions for Completing EPA's Pre-Printed NPDES Discharge Monitoring Report (DMR) Form 3320-1 and is not intended as a direct attachment to this permit. Any modification or revocation to this "Guidance Document" will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in Attachment A.

PART I.A.1 (continued)

3. The discharge shall not cause a violation of the water quality standards of the receiving waters.
4. The pH of the effluent shall not be less than 6.5 s.u., nor greater than 8.3 s.u. at any time, unless these values are exceeded due to natural causes or as a result of an approved treatment process.
5. The discharge shall not cause objectionable discoloration of the receiving water.
6. The effluent shall not contain visible oil sheen, foam, or floating solids at any time.
7. The results of sampling for any parameter above its required frequency must also be reported.
8. The permittee shall minimize the use of chlorine containing chemicals.
9. This permit shall be modified, or revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(6)(2), and 307(a)(2) of the Act, if the effluent standard or limitation so issued or approved:
   a. contains different conditions or is otherwise more stringent than any effluent limitation in this permit; or
   b. controls any pollutant not limited by this permit.

   If the permit is modified or reissued, it shall be revised to reflect all currently applicable requirements of the Act.
10. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
    a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
       i. One hundred micrograms per liter (100 µg/1)
       ii. Two hundred micrograms per liter (200 µgA) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/1) for 2, 4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (l mg/l) for antimony.
       iii. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R.122.21(g)(7); or
       iv. Any other notification level established by the Director in accordance with 40 C.F.R. § 122.44(f).
    b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following “notification levels:"
    c. Five hundred micrograms per liter (500 µg/1);

i. One milligram per liter (1 mg/l) for antimony;

ii. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. §122.21(g)(7); or

iii. Any other notification level established by the Director in accordance with 40 C.F.R. §122.44(f).

d. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.

B. ABANDONMENT OF OUTFALL 002

The permittee shall notify EPA and MassDEP in writing upon the commencement of flow from Outfall 001 and the abandonment of Outfall 002. The notification shall be submitted to the EPA and MassDEP under separate cover posted within 10 days of the abandonment, in accordance with the procedures in Part I.D of this permit.

C. BEST MANAGEMENT PRACTICES PLAN (BMPP)

1. A plan shall be developed which establishes Best Management Practices (BMPs) to be followed in operating the sprout production facility, cleaning tanks and other equipment and disposing of any liquid and solid waste. The purpose of the plan is to identify and to describe the practices which minimize the amounts of pollutants (biological and chemical) discharged to surface waters.
2. The BMP plan **shall be completed within 120 days after the effective date of this permit and submitted to the MassDEP and the EPA Region 1**; the plan should be modified as necessary during the life of the permit. A current copy of the plan shall be maintained at the facility.
3. The permittee shall submit a letter to EPA and the MassDEP within 150 days after the effective date of this permit certifying that the plan addresses all required elements described in this permit and that the BMP plan has been fully implemented at the facility. In the letter, the permittee shall include the specific date the plan was implemented. On that specific date, the plan becomes an enforceable element of the permit.
4. The permittee shall **amend the BMP plan within thirty (30) days following a change in facility design, construction, operation, or maintenance which affects the potential for the discharge of pollutants into surface waters**. A letter summarizing any amendments of the BMP plan shall be submitted to EPA and MassDEP as in subparagraph 2 above.
5. The BMP Plan shall include, as a minimum, the following items:
   a. During operations:
      i. A description of the pollution control equipment or methods used to collect wastewater and minimize the coliform bacteria and chlorine present in the wastewater and the final effluent discharged.

ii. A description of facility treatment redundancies and identification of other specific measures available when excessive coliform bacteria and chlorine occurs in the effluent discharge, thereby preventing or limiting the discharge of these items.

b. Cleaning of tanks and other equipment:

i. Describe in detail how the production facilities are to be washed, cleaned and disinfected and amount of cleaning products, water necessary.

ii. Describe housekeeping practices implemented to limit coliform bacteria in the sprout production facility and process wastewater.

iii. Include a description of the collection and disposal of any solid wastes.

c. Chemicals used in the facility:

i. List in the plan all cleaning agents, nutrients or other chemicals that are expected to be used at the facility. For each agent or chemical, identify:

1) Product name of the medication or chemical.

2) The purpose or use of the chemical.

3) The approximate dosage concentration, frequency of application (hourly, daily, etc.) and the duration (hours, days) of treatment.

4) The method of application.

5) Information on the persistence and toxicity of each chemical.

6) Available aquatic toxicity data for each medication or chemical used (vendor data, literature data, etc.); LC_{50} at 48 and/or 96 hours and No Effect Level (NOEL) concentrations for typical aquatic organisms (salmon, trout, daphnia, fathead minnow, etc.).

d. Personnel Training

i. Describe the training to be provided for employees to assure they understand the goals and objectives of the BMPs, the requirements of the NPDES Permit and their individual responsibilities for complying with the goals and objectives of the BMP Plan and the NPDES permit.

D. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report Forms(s) postmarked no later than the 15th day of the following month.

Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, MA 02114

The State agency is:

Massachusetts Department of Environmental Protection
Western Regional Office
Bureau of Resource Protection
436 Dwight Street
Springfield, MA 01103

Signed and dated Discharge Monitoring Report forms, toxicity test reports, and all other reports required herein, shall also be submitted to the State at the following address:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, MA 01608

E. STATE PERMIT CONDITIONS

1. This discharge permit is issued jointly by the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) under federal and state law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the MassDEP pursuant to M.G. L, Chap. 21, §43.
2. Each agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension, or revocation of this permit shall be effective only with respect to the agency taking such action, and shall not affect the validity or status of this permit as issued by the other agency, unless and until each agency has concurred in writing with such modification, suspension, or revocation. In the event any portion of this permit is declared invalid, illegal, or otherwise issued in violation of state law such permit shall remain in full force and effect under federal law as an NPDES permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal, or otherwise issued in violation of federal law, this permit shall remain in full force and effect under state law as a permit issued by the Commonwealth of Massachusetts.